

WHAT IS CLAIMED IS:

1. A user interface control apparatus for avoiding a conflict that occurs between setup data for a predetermined object to be controlled, which are input
5 via a user interface, comprising:

storage means for storing conflict process rules that indicate conflict avoidance descriptions;

- complementary rule generation means for generating complementary rules that indicate
10 complementary conflict avoidance descriptions on the basis of the conflict process rules stored in said storage means; and

- update means for updating the input setup data in accordance with the conflict process rules and the
15 complementary rules.

2. The apparatus according to claim 1, wherein when said storage means stores a plurality of conflict process rules for one state of one function of the object to be controlled having two states, and does not
20 store any conflict process rule for the other state, said complementary rule generation means generates inverse logic of the conflict process rules for the one state as complementary rules to conflict process rules for the other state.

- 25 3. The apparatus according to claim 1, wherein said storage means stores the conflict process rules as a conflict process rule description file.

4. The apparatus according to claim 3, wherein the conflict process rule description file is described in accordance with a predetermined markup language.
5. The apparatus according to claim 4, wherein the conflict process rule description file describes local rules which can be applied to only a specific object to be controlled, and a universal rule description file that describes universal rules which can be commonly applied to a plurality of objects to be controlled is externally referred to.
6. The apparatus according to claim 3, wherein the conflict process rule description file contains a description of an update command of the user interface.
7. The apparatus according to claim 3, wherein said complementary rule generation means further comprises means for additionally writing the generated complementary rules in the conflict process rule description file.
8. The apparatus according to claim 1, further comprising means for informing that the setup data have been updated upon applying the conflict process rules or the complementary rules by said update means.
9. The apparatus according to claim 1, wherein the object to be controlled is an image forming apparatus.
10. A user interface control method for avoiding a conflict that occurs between setup data for a

predetermined object to be controlled, which are input
via a user interface, comprising:

the complementary rule generation step of
referring to a conflict process rule description file
that describes conflict process rules that indicate
conflict avoidance descriptions, and generating
complementary rules that indicate complementary
conflict avoidance descriptions on the basis of the
conflict process rules; and

the update step of updating the input setup data
in accordance with the conflict process rules and the
complementary rules.

11. The method according to claim 10, wherein the
complementary rule generation step includes the step of
generating, when the conflict process rule description
file describes a plurality of conflict process rules
for one state of one function of the object to be
controlled having two states, and does not describe any
conflict process rule for the other state, inverse
logic of the conflict process rules for the one state
as complementary rules to conflict process rules for
the other state.

12. The method according to claim 10, wherein the
conflict process rule description file is described in
accordance with a predetermined markup language.

13. The method according to claim 12, wherein the
conflict process rule description file describes local

rules which can be applied to only a specific object to be controlled, and a universal rule description file that describes universal rules which can be commonly applied to a plurality of objects to be controlled is externally referred to.

14. The method according to claim 10, wherein the conflict process rule description file contains a description of an update command of the user interface.

15. The method according to claim 10, wherein the complementary rule generation step further comprises the step of additionally writing the generated complementary rules in the conflict process rule description file.

16. The method according to claim 10, further comprising the step of informing that the setup data have been updated upon applying the conflict process rules or the complementary rules in the update step.

17. A program for making a computer implement a user interface control method for avoiding a conflict that occurs between setup data for a predetermined object to be controlled, which are input via a user interface, comprising:

a program code of the complementary rule generation step of referring to a conflict process rule description file that describes conflict process rules that indicate conflict avoidance descriptions, and generating complementary rules that indicate

complementary conflict avoidance descriptions on the basis of the conflict process rules; and

a program code of the update step of updating the input setup data in accordance with the conflict process rules and the complementary rules.

18. The program according to claim 17, wherein the program code of the complementary rule generation step includes the step of generating, when the conflict process rule description file describes a plurality of conflict process rules for one state of one function of the object to be controlled having two states, and does not describe any conflict process rule for the other state, inverse logic of the conflict process rules for the one state as complementary rules to conflict process rules for the other state.

19. The program according to claim 17, wherein the conflict process rule description file is described in accordance with a predetermined markup language.

20. The program according to claim 19, wherein the conflict process rule description file describes local rules which can be applied to only a specific object to be controlled, and a universal rule description file that describes universal rules which can be commonly applied to a plurality of objects to be controlled is externally referred to.

21. The program according to claim 17, wherein the conflict process rule description file contains a description of an update command of the user interface.

22. The program according to claim 17, wherein the
5 program code of the complementary rule generation step further comprises a program code of the step of additionally writing the generated complementary rules in the conflict process rule description file.

23. The program according to claim 17, further
10 comprising a program code of the step of informing that the setup data have been updated upon applying the conflict process rules or the complementary rules in the update step.

24. A storage medium that stores a program for making
15 a computer implement a user interface control method for avoiding a conflict that occurs between setup data for a predetermined object to be controlled, which are input via a user interface, storing:

a conflict process rule description file that
20 describes conflict process rules that indicate conflict avoidance descriptions;

a program code of the complementary rule
generation step of referring to the conflict process
rule description file, and generating complementary
25 rules that indicate complementary conflict avoidance
descriptions on the basis of the conflict process
rules; and

a program code of the update step of updating the input setup data in accordance with the conflict process rules and the complementary rules.

25. An information processing apparatus comprising:

5 means for executing a basic process for matching setup conditions with each other;

generation means for generating complementary process rules that complement the basic process so as to match the setup conditions; and

10 control means for matching the setup conditions in accordance with the basis process and complementary process rules, and determining control parameters based on the conditions.

26. The apparatus according to claim 25, wherein said
15 control means determines the presence/absence of a conflict between setup conditions, which are input from input means for inputting the setup conditions, and applies the basic process and the complementary process rules to determine control parameters if any conflict
20 is detected.

27. The apparatus according to claim 25, further comprising:

interface means for visualizing the setup conditions; and

25 display control means for displaying the conditions determined by said control means on said interface means.

28. The apparatus according to claim 27, wherein said display control means informs that the setup conditions have been changed upon applying the basic process and the complementary process rules by said control means.

5 29. An image forming apparatus comprising:

an information processing apparatus cited in claim 25; and

image forming means for determining control parameters which are input to said information
10 processing apparatus and are used to form an image, and forming image information on the basis of the determined control parameters.

30. The apparatus according to claim 29, wherein said image forming apparatus includes a printer and
15 facsimile.

31. An information processing method comprising:

the step of executing a basic process for matching setup conditions with each other;

the generation step of generating complementary
20 process rules that complement the basic process so as to match the setup conditions; and

the control step of matching the setup conditions in accordance with the basis process and complementary process rules, and determining control parameters based
25 on the conditions.

32. The method according to claim 31, wherein the control step includes the step of determining the

presence/absence of a conflict between setup conditions,
which are input from the input step of inputting the
setup conditions, and applying the basic process and
the complementary process rules to determine control
5 parameters if any conflict is detected.

33. The method according to claim 31, further comprising:

the interface step of visualizing the setup conditions; and

10 the display control step of displaying the
conditions determined by the control step in the
interface step.

34. The method according to claim 33, wherein the display control step includes the step of informing
that the setup conditions have been changed upon
15 applying the basic process and the complementary process rules by the control step.

35. A program for making a computer implement an information processing method, comprising:

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20         a module for executing a basic process for
        matching setup conditions with each other;

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a generation module for generating complementary process rules that complement the basic process so as to match the setup conditions; and

25 a control module for matching the setup
conditions in accordance with the basis process and

complementary process rules, and determining control parameters based on the conditions.

36. The program according to claim 35, wherein said control modules determines the presence/absence of a
5 conflict between setup conditions, which are input from an input module for inputting the setup conditions, and applies the basic process and the complementary process rules to determine control parameters if any conflict is detected.

10 37. The program according to claim 35, further comprising:

an interface module for visualizing the setup conditions; and

15 a display control module for displaying the conditions determined by said control module in said interface module.

38. The program according to claim 37, wherein said display control module informs that the setup conditions have been changed upon applying the basic
20 process and the complementary process rules by said control module.

39. A computer readable storage medium that stores a program module used to make a computer implement an information processing method, said program module
25 comprising:

a module for executing a basic process for matching setup conditions with each other;

a generation module for generating complementary process rules that complement the basic process so as to match the setup conditions; and

a control module for matching the setup
5 conditions in accordance with the basis process and complementary process rules, and determining control parameters based on the conditions.

40. A user interface control apparatus for avoiding a conflict that occurs due to setup information, which is
10 input via a user interface that can input setup information for a predetermined object to be controlled, comprising:

storage means for storing conflict process rules indicating conflict avoidance strategies; and

15 update means for updating related setup information by applying the conflict process rules on the basis of the input setup information,

said update means comprising:

detection means for detecting setup information
20 to be changed by applying the conflict process rules; and

setup information change means for changing only the detected setup information.

41. The apparatus according to claim 40, further
25 comprising informing means for informing that the setup information has been changed by said setup information change means.

42. The apparatus according to claim 40, wherein the object to be controlled is an image forming apparatus.

43. A user interface control method for avoiding a conflict that occurs due to setup information, which is input via a user interface that can input setup information for a predetermined object to be controlled, comprising:

the detection step of referring to a conflict process rule description file that describes conflict process rules indicating conflict avoidance strategies, and detecting setup information to be changed by applying the conflict process rules; and

the setup information change step of changing only the detected setup information.

44. The method according to claim 43, further comprising the informing step of informing that the setup information has been changed in the setup information change step.

45. The method according to claim 43, wherein the conflict process rule description file can contain a description of a control command which restricts a change in predetermined setup information, and

the detection step comprises the step of restricting a change in corresponding setup information in accordance with a control command read out from the conflict process rule description file.

46. A program for making a computer implement a user interface control method for avoiding a conflict that occurs due to setup information, which is input via a user interface that can input setup information for a predetermined object to be controlled, comprising:

a program code of the detection step of referring to a conflict process rule description file that describes conflict process rules indicating conflict avoidance strategies, and detecting setup information to be changed by applying the conflict process rules; and

a program code of the setup information change step of changing only the detected setup information.

47. The program according to claim 46, further comprising a program code of the informing step of informing that the setup information has been changed in the setup information change step.

48. A storage medium that stores a program for making a computer implement a user interface control method for avoiding a conflict that occurs due to setup information, which is input via a user interface that can input setup information for a predetermined object to be controlled, storing:

a program code of the detection step of referring to a conflict process rule description file that describes conflict process rules indicating conflict avoidance strategies, and detecting setup information

to be changed by applying the conflict process rules;
and

a program code of the setup information change
step of changing only the detected setup information.